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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/043,392	11/07/2001	Jason K. Trotter	ITWO:0015	4607

7590 01/20/2004
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EXAMINER

ORTIZ, ANGELA Y

ART UNIT	PAPER NUMBER
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1732

DATE MAILED: 01/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/043,392

Applicant(s)

TROTTER ET AL.

Examiner

Angela Ortiz

Art Unit

1732

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14, 17-24, 27-34 and 52-63 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 59-63 is/are allowed.
- 6) ☒ Claim(s) 1-8, 11, 12, 18, 19, 21-24, 29, 30, 52, 53, 56 and 57 is/are rejected.
- 7) ☒ Claim(s) 9, 10, 13, 14, 17, 20, 27, 28, 31-34, 54, 55 and 58 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 3-6, 11-12, 18, 19, 24, 29, 30, 52, 53 are rejected under 35 U.S.C. 102(b) as being anticipated by Jackson, USP 4,290,181 for the reasons cited in the previous office action.

The cited reference teaches the claimed method including forming a ball joint by placing a ball stud within a desired structure, and injecting mold material into the structure to mold a layer of material around the ball stud and form a mechanical joint. The desired structure includes a cavity that is shaped to receive the ball portion of the ball stud. A retaining ring may be provided at the edge of the structure, or a positioning fixture may be provided with first and second flanged edges to allow the ball stud to be self-retaining, and allow symmetrical centered positioning of the ball stud within the structure. After injecting of the mold material, the ball stud may be rotated to allow the material to contract and fix to the ball stud, and to allow the formed structure to be self-tolerancing. Please see col. 2, line 15 to col. 3, line 25.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2, 21-23, 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jackson, USP 4,290,181 in view of Runyan et al., USP 4,430,285 for the reasons cited in the previous office action.

The cited primary reference substantially teaches the basic claimed method including forming a ball joint by placing a ball stud within a desired structure, and injecting mold material into the structure to mold a layer of material around the ball stud and form a mechanical joint. The desired structure includes a cavity that is shaped to receive the ball portion of the ball stud. A retaining ring may be provided at the edge of the structure, or a positioning fixture may be provided with flanged edges to allow the ball stud to be self-retaining, and allow symmetrical centered positioning of the ball stud within the structure. After injecting of the mold material, the ball stud may be rotated to allow the material to contract and fix to the ball stud, and to allow the formed structure to be self-tolerancing. Please see col. 2, line 15 to col. 3, line 25.

The cited primary reference does not set forth molding of the ball stud in place.

The cited secondary reference teaches the basic claimed process of molding a ball stud assembly. The method teaches as conventional the forming of a ball stud structure by molding a ball structure with an integral shank. The ball stud is placed within a cavity, and a housing is formed around the ball stud, and shaped into a desired configuration. See col. 3, lines 25-50.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to so include molding of the ball stud as shown in the added reference, when performing the process set forth in the primary reference, as an alternative equivalent means for providing the ball stud as desired, as such would equivalently yield the desired joint structure.

Note that the liner and the housing structure comprise plural layers around the ball stud.

Claim 57 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jackson et al., USP 4,290,181 in view of Jackson et al., USP 6,010,271 (already of record) for the reasons cited in the previous office action.

The cited primary reference substantially teaches the basic claimed method including forming a ball joint by placing a ball stud within a desired structure, and injecting mold material into the structure to mold a layer of material around the ball stud and form a mechanical joint. The desired structure includes a cavity that is shaped to receive the ball portion of the ball stud. A retaining ring may be provided at the edge of the structure, or a positioning fixture may be provided with flanged edges to allow the ball stud to be self-retaining, and allow symmetrical centered positioning of the ball stud

within the structure. After injecting of the mold material, the ball stud may be rotated to allow the material to contract and fix to the ball stud, and to allow the formed structure to be self-tolerancing. Please see col. 2, line 15 to col. 3, line 25.

The cited primary reference does not set forth a spring structure within the housing structure.

The added reference teaches placing a coil (34) within the open housing structure (12), providing a ball within the structure. See claim 1 and col. 2, lines 60-68.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a spring structure within the housing unit as shown in the added reference, when performing the process set forth in the primary reference, for providing a biasing pressure means on the ball member.

Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jackson, USP 4,290,181 in view of Borgen et al., USP 4,439,909 for the reasons cited in the previous office action.

The cited primary reference teaches the basic claimed method including forming a ball joint by placing a ball stud within a desired structure, and injecting mold material into the structure to mold a layer of material around the ball stud and form a mechanical joint. The desired structure includes a cavity that is shaped to receive the ball portion of the ball stud. A retaining ring may be provided at the edge of the structure, or a positioning fixture may be provided with flanged edges to allow the ball stud to be self-retaining, and allow symmetrical centered positioning of the ball stud within the

structure. After injecting of the mold material, the ball stud may be rotated to allow the material to contract and fix to the ball stud, and to allow the formed structure to be self-tolerancing. Please see col. 2, line 15 to col. 3, line 25.

The cited primary reference does not show the claimed step of creating a temperature differential between the housing structure and the ball stud.

The added secondary reference teaches as conventional the forming of a ball joint by preheating a housing structure and force fitting the structure around a ball stud, wherein a tight fit is required. See col. 2, line 55 to col. 3, line 15.

It would have been obvious to one of ordinary skill in the art to create a temperature differential as shown in the added reference, when performing the process set forth in the primary reference, for forming a structure with a tight fit.

The added reference shows heating the housing structure; note that heating of the ball would have been obvious also as heating of either structure would equivalently achieve the desired temperature differential.

Note that the reference teaches the step of quenching the heated housing. The step of quenching cools the assembly and is equivalent to the claimed step of cooling.

Note that the housing cools toward the ball stud as claimed.

Allowable Subject Matter

Claims 9, 10, 13, 14, 17, 20, 27, 28, 31-34, 54, 55, 58 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in

independent form including all of the limitations of the base claim and any intervening claims.

Claims 59, 60, 61, 62, 63 are allowed.

Response to Arguments

Applicant's arguments filed 15 October 2003 have been fully considered but they are not persuasive.

Applicant argues that the 102 rejection and claim 24 stating that the art does not show the first and second centering portions as claimed.

Note that the art applied teaches a first and second flange ends as indicated in the rejection. Such means are readable on the claimed first and second centering portions of first and second mold structures.

Applicant argues claim 52, stating that the feature "independently" is not addressed.

As the claim current reads, the independent feature is met by the first and second flange ends as argued previously. No other manipulative language is presented to further distinguish this feature.

Applicant argues the 103 rejections, stating that a prima facie case of obviousness has not been presented, nor a reason for combining the references.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention

where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation is supported and repeated. With respect to claims 2, 21-23, 56 it would have been obvious to one of ordinary skill in the art at the time the invention was made to so include molding of the ball stud as shown in the added reference, when performing the process set forth in the primary reference, as an alternative equivalent means for providing the ball stud as desired, as such would equivalently yield the desired joint structure. Note that the liner and the housing structure comprise plural layers around the ball stud.

With respect to claim 57, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a spring structure within the housing unit as shown in the added reference, when performing the process set forth in the primary reference, for providing a biasing pressure means on the ball member.

With respect to claims 7-8, it would have been obvious to one of ordinary skill in the art to create a temperature differential as shown in the added reference, when performing the process set forth in the primary reference, for forming a structure with a tight fit. The added reference shows heating the housing structure; note that heating of the ball would have been obvious also as heating of either structure would equivalently achieve the desired temperature differential. This is well within the level of ordinary skill within the art. Note that the reference teaches the step of quenching the heated

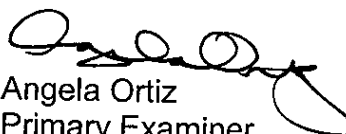
housing. The step of quenching cools the assembly and is equivalent to the claimed step of cooling. Note that the housing cools toward the ball stud as claimed. The argued temperature differential is met by the differences shown. If applicant has interpreted the meaning of the words differently, the claims should reflect the narrower interpretation desired.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela Ortiz whose telephone number is 703-308-4446. The examiner can normally be reached on Monday-Thursday 9:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaianne can be reached on 703-305-5493. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


Angela Ortiz
Primary Examiner
Art Unit 1732